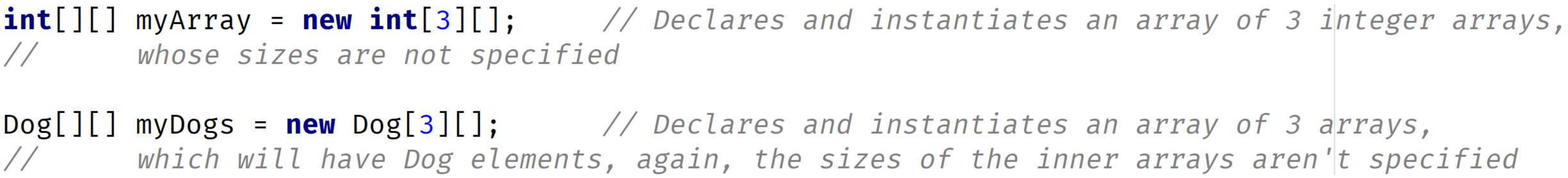
Two Dimensional Array

When we declare multi-dimensional arrays, the declared type can itself be an array, and this is how Java supports two-dimensional arrays:



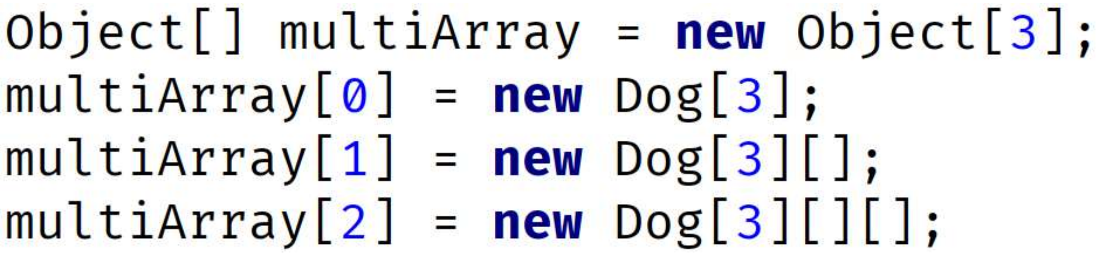
```
int[][] myArray = new int[3][];      // Declares and instantiates an array of 3 integer arrays,
//      whose sizes are not specified

Dog[][] myDogs = new Dog[3][];       // Declares and instantiates an array of 3 arrays,
//      which will have Dog elements, again, the sizes of the inner arrays aren't specified
```

Type and length of array	Possible Element Values (each element is an array and can be any length)
int[3][]	[5, 7, 9, 10] [3, 6] [11, 21, 31]
Dog[3][]	[pug, rottweiler] [germanShephard, poodle, cavapoo] [beagle, boxer, bulldog, yorkie]

Multi Dimensional Array

We can take that even further, the outer array can have references to any kind of array itself.

In this example, we have an outer array with three elements.



```
Object[] multiArray = new Object[3];
multiArray[0] = new Dog[3];
multiArray[1] = new Dog[3][];
multiArray[2] = new Dog[3][][];
```

The first element is itself a single-dimension array.

The second element is a two-dimensional array.

And lastly, the third element is a three-dimensional array.